What is claimed is:

1. A network node connected via transmission links to a plurality of distant nodes, comprising:

an ATM switch for establishing a virtual connection from any one of a plurality of input ports thereof to any one of outgoing transmission links; and

a plurality of multiplexers respectively corresponding to said distant nodes, the multiplexers receiving and multiplexing user cells from said ATM switch into outbound cells having any one of all virtual channel identifiers assigned to said multiplexers and supplying the outbound cells to said plurality of input ports of the ATM switch.

2. A network node as claimed in claim 1, wherein said ATM switch is configured to establish a virtual connection from any one of incoming transmission links to any one of a plurality of output ports thereof, further comprising a plurality of demultiplexers respectively corresponding to said distant nodes, the demultiplexers receiving and demultiplexing inbound cells from said plurality of output ports of the ATM switch into user cells and supplying the user cells to said ATM switch, said inbound cells having any one of all virtual channel identifiers assigned to said demultiplexers.

3. A network node as claimed in claim 1, further comprising a second switch for receiving said user cells from said ATM switch and establishing a plurality of virtual connections according to destinations of the received user cells to apply the received user cells to said multiplexers.

4. A network node as claimed in claim 3, wherein said second switch is configured to receive the outbound cells from said multiplexers and establish a plurality of virtual connections to apply the received outbound cells to said ATM switch through the virtual connections.

5. A network node as claimed in claim 2, further comprising a second switch for receiving said user cells from said demultiplexers and establishing a plurality of virtual connections to apply the received user cells to said ATM switch through the virtual connections.

6. A network node as claimed in claim 5, wherein the second switch is further configured to receive said inbound cells from said ATM switch, and apply the received inbound cells via the second switch to said demultiplexers before receiving said user cells from said demultiplexers.

7. A network node as claimed in claim 4, wherein said virtual connections established in said ATM switch and said second switch are permanent virtual connections.

8. A network node as claimed in claim 4, wherein said virtual connections established in said ATM switch and said second switch are switched virtual connections.

9. A network node connected via incoming transmission links to a plurality of distant nodes, comprising:

an ATM switch for establishing a virtual connection from any one of

said incoming transmission links to any one of a plurality of output ports thereof; and

a plurality of demultiplexers respectively corresponding to said distant nodes, the multiplexers receiving and demultiplexing inbound cells from said plurality of output ports of the ATM switch into user cells and supplying the user cells to said ATM switch, said inbound cells having any one of all virtual channel identifiers assigned to said demultiplexers.

10. A network node as claimed in claim 9, further comprising a second switch for receiving said user cells from said demultiplexers and applying the received user cells to said ATM switch.

11. A network node as claimed in claim 10, wherein the second switch is configured to receive said inbound cells from said ATM switch, and applying the received inbound cells via the second switch to said demultiplexers before receiving said user cells from said demultiplexers.

12. A network node as claimed in claim 10, wherein said virtual connections established in said ATM switch and said second switch are permanent virtual connections.

13. A network node as claimed in claim 10, wherein said virtual connections established in said ATM switch and said second switch are permanent virtual connections.